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(56) Documents cited
GB 2230373 A   GB 2063936 A   GB 2072395 A

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(54) Game machine

(57) A game machine of the fruit-machine type has a reels display (3), typically comprising three rotatable reels with fruit symbols, and a video display screen (15) with associated video game controls (20). Elements of a trail system (21) are progressively illuminable by certain outcomes of a game played on the reels. Sufficient advancement of the illuminable trail elements (21) initiates the display of a video game on the screen (15), typically involving an initial choice element followed by a second element which is an interactive game of chance or skill.
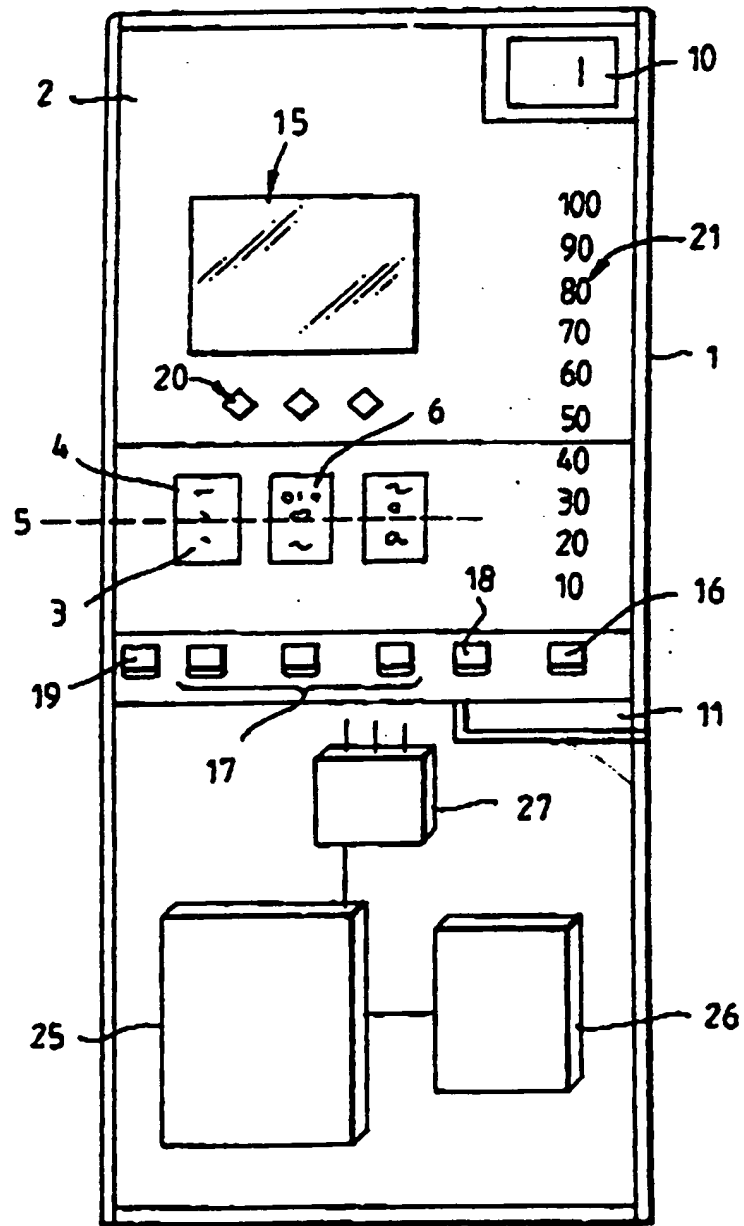
Fig.1
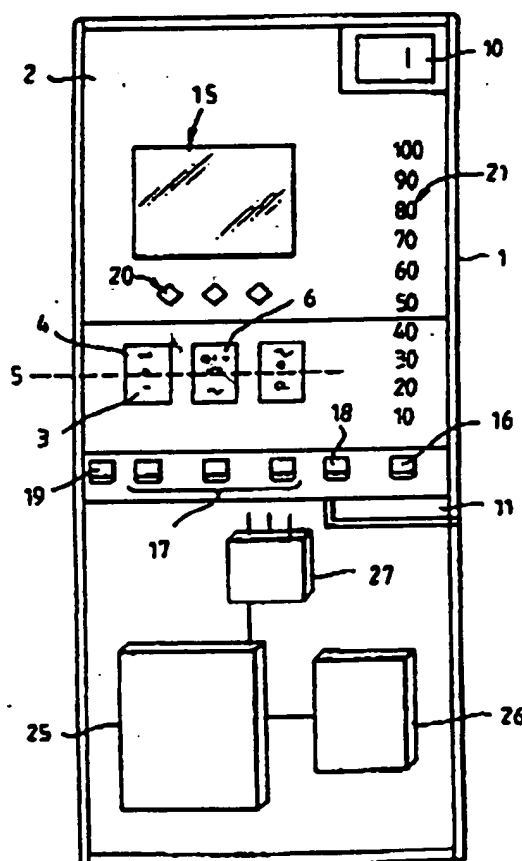
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Fig.1

GAME MACHINES

This invention relates to game machines, in particular fruit machines.

5   Fruit machines are well known. A conventional fruit machine is a gaming or amusement machine having a reel display which consists either of plural rotatable reels with peripheral series of symbols on them, or representations of such reels.

10   The machine generally has means for receiving credits e.g. by insertion of cash, or in the form of tokens or cards. These credits are converted, as soon as they are inserted or more usually by the action of a start button, to play a game on the reel display. In the

15   game the reels rotate and then stop in a random or quasi-random fashion. If the reel display has simulated reels, the symbols shown on these are changed correspondingly in a random or quasi-random fashion, and it is normal to simulate to some extent the spinning of actual reels.

20   After the reel display is run, the combination of symbols appearing along one or more "win lines" determines whether or not some award, such as a prize, pay-out or game advantage, has been won.

       While each conversion of a credit will result in a

25   game on the reel display, it is also conventional to offer at least one and usually several "features". These are further gam elements which occur intermittently over

the playing of a number of games on the reel display.

The features have involved enhancement of the basic fruit machine game. For example, when a winning combination of symbols appears on the win line, a "gamble" feature gives the player an opportunity to gamble the basic pay-out, either increasing it or losing it. Another very common feature is the "hold" whereby in some games a player is allowed to keep one or more of the symbols unvaried. In a "nudge" feature, a player is given an opportunity to move reels controllably in a stepwise fashion in an attempt to reach a winning combination. In a "trail" feature, a series of display elements is shown along which the player has a certain chance of progressing as playing of games continues. If the player progresses to the end of the trail, there may be a further prize, feature or jackpot to be won.

GB-A-2192478 describes a fruit machine in which a video display screen or other electronic display replaces the normal machine facade using electric bulbs. The further display can be used to indicate availability of features such as nudges, trails and gambles which previously were indicated using electric bulbs behind a printed glass screen.

GB-A-2117155 describes a separate screen showing a representation of symbols on the reels, to assist the player in using a nudge feature.

GB-A-2072395 describes video screen addition to a

fruit machine, permitting the pl ying of video games for certain selected dispositions of the reels.

In the present invention, we are concerned with providing a new kind of gaming or amusement machine. The machine is generally speaking a fruit machine, that is it has a reel display which plays a game for each credit converted as described above. The machine has a further display which is an electronic display screen such as a cathode ray tube. This screen is used to provide various novel features as discussed below.

In one particular aspect, the machine comprises means providing a skill game feature which is played using the further display screen and which constitutes a "feature" with respect to the fruit machine game. The skill game, or various skill games, may be provided as awards depending on the performance of the fruit machine game of the reel display. In particular, opportunity to play a feature on the screen may be achieved by means of a "trail" system or the like, dependent on the fruit machine game. Additionally or alternatively, opportunities to play the skill game may be presented in a random or quasi-random manner over the playing of a number of games of the fruit machine reel display.

In one preferred embodiment, a skill game offered for playing on the screen is a quiz game. For example, when the quiz game feature is offered, the screen can present a question and a multiple choice of answers from

which the player selects, n award or the offering of a
further feature being available if the player selects the
correct answer using selection means provided on the
machine.

5   Another possible skill game is of the "video game"
type involving e.g. dexterity and/or timing, for which
the electronic screen display is peculiarly well adapted.
Moving images on the screen may represent, for example, a
shooting game in which the player uses an actuator on the
10   machine to shoot at a target or targets presented on the
further display screen. Again, an award or the offer of
a further feature can be made dependent on the player's
success in the shooting game.

The further display screen which we use in the
15   present invention can have any one or more of a number of
possible functions. Some of these are now mentioned, as
other aspects of the invention.

Firstly, chance-governed features of the fruit
machine game can be provided on the screen. These might
20   include, for example, the display of gamble or "nudge"
features.

We propose some chance-governed game features for
display on the screen which are in themselves new, or
whose use in such a machine is new.

25   In one feature, an array of identifiable fields is
presented on screen, one or more of which can be
individually selected by the pl yer e.g. by a

controllable cursor caused to appear on the creen, and a symbol corresponding to each selected field displayed or "uncovered". According to the identity of the uncovered symbol, an award is or is not made, and/or the amount of

5   an award is adjusted.

Preferably the symbol associated with a respective field is varied between one playing of the feature and the next, to make it less predictable.

In another feature, a playing card face selected at

10   random or sequentially is displayed on the screen. A player can then enter a prediction as to the relative value of another card face. The machine store then displays a subsequent card face on the screen; this is compared with the player's prediction and an award (which

15   may be the offer of a further feature) made dependent on the player's accuracy.

The feature may offer a plurality of opportunities for guessing the relative value of subsequent cards in one game, provided that each previous guess is correct.

20   Means may be provided whereby no subsequently displayed card face is a duplicate of one previously displayed in any one game. This helps the player to guess.

In another new feature, after the fruit machine game

25   has been played but within the conversion of that respective credit, the machine itself generates automatically one or more selected extra outcomes for the

reel displ y, selected from a restricted field of outcomes corresponding to ewards or at least an increased chance of an award compared to the normal fruit machine game. The outcome(s) may be shown on the reel display

5   itself and/or on the further screen display.

In another new feature, the machine has a special status mode which it may enter either randomly, quasi-randomly and/or in response to certain selected outcomes of the fruit machine game. In this special status, the

10   machine is receptive to a sequence input by the player using the machine controls, determining an award on the basis of the input sequence. When the machine enters the special status, an indicator appears on the display screen. This is a so-called "secret" feature, in which

15   usually the display screen gives no instructions to the player as to how to obtain an award. The award may be determined by a coded sequence arising from the order of pressing of e.g. a set of buttons.

In a further aspect, the feature presented on the

20   further display screen may comprise the reproduction on the screen of a recording of actual filmed events, or an animated image. Again, a cathode ray tube-type screen is particularly well adapted to offer a feature of this entirely novel type. The reproduction of the recorded

25   actual event might be comprised in a skill feature or in a chance feature. The feature may therefore involve so-called "virtual reality" whereby the player either

interacts, or is given the impression of interacting, with the events taking place on the screen.

In another particular aspect, in a fruit machine as defined and having a further display screen as mentioned, a stored chance game feature is displayed on the further display screen intermittently over a number of fruit machine games. Further games are stored in the machine store. For a certain restricted field of outcomes of the chance game feature, one of the further stored games is made available for display on the further display screen. This game may be sent to the screen automatically for display when the specified outcome of the chance game is confirmed. More preferably, selection means are provided whereby the player may choose between (1) displaying the further stored game on the screen and (2) returning to the fruit machine game or continuing on the screen with the existing chance game feature.

The further stored game element may itself be a chance game, or a skill game such as a quiz or dexterity/timing test.

In another aspect, the further display screen may be used to give information about the game. This might be general advice as to the operation of the machine. Additionally or alternatively, the display information could be "game hints" occurring transiently as a game proceeds and making suggestions to the player relevant to the actual state of the fruit machin game. For example,

the machine might flash up a hint to "hold" a particular
symbol.

In another aspect, means can be provided to display
on the further display screen the value of the awards

5   (winnings or credits) accumulated by a player, either
automatically or upon request being entered by the player
to display the value.

A further new proposal for the machine is making the
further display screen touch-responsive. The technology

10 for making display screens touch-responsive is generally
known, but has not previously been applied to a screen
presenting features of a fruit machine game. For
example, a touch-responsive screen could be used for
selecting the player's answer to a quiz question or the

15 like, in a manner which is much more intuitively natural
that the use of conventional button actuators which are
distant from the screen and designed primarily for other
purposes such as operating the fruit machine game.

In a further aspect, the further display screen

20 displays a chance game feature of a novel type, namely a
"mystery win" in which the size/existence of a win is
determined by an arrangement of elements e.g. playing
card faces, which is predetermined by the machine for
each play of the game. Thus the player takes little or

25 no part in determining whether or not he has won, but the
elements are concealed on the screen until the player
"uncovers" the relevant portion e.g. the face of a

pl ying card, using a prescribed actuation, to see whether or not h /sh ha won on that feature.

In another as;e;t, the screen can be used to display, from time to time, the value of a progressive

5   jackpot which may be accumulating.

A further aspect of use of the screen is related to a "trail" feature, as mentioned above. It has previously been suggested to provide a trail feature on screen (see GB-A-2192478). We also propose however to provide a

10   trail feature on the fascia of the machine and which, when a predetermined level thereon is reached, initiates the offering of a feature on the video display screen. The trail feature on the fascia preferably is patterned so that it actually leads towards the physical position

15   of the further display screen on the machine.

In a still further aspect, means may be provided in the machine for displaying on the screen status information indicating the operational condition of the machine. This information can be used for maintenance

20   and service testing.

The above description identifies features of the machine functionally. It will be understood, however, that the design of hardware and software to perform such functions is generally within the skill of the skilled

25   person in this field and does not need to be explicitly described. Means for performing the identified function are therefore described implicitly.

A specific embodiment of the pr sent concepts iz now described in some detail, with reference to the accompanying drawing which is a view of the front of a fruit machine.

5   As seen in the figure, a gaming and amusement machine of the fruit-machine type comprises an upright cabinet 1 with a display at the front. The display includes a glass fascia panel 2 with printed art work and illumination behind in a known manner. Three rotatable

10   reels 3 are mounted in the machine in a generally conventional manner, behind respective display windows 4 defining a win line 5 along which symbols 6 on the reels are aligned. A coin acceptor slot 10 for receiving credits is provided at the top of the fascia, and a tray

15   11 for issuing payouts - in the form of coins or tokens - is provided at the front of the cabinet underneath the inclined part of the cabinet where the reels are displayed.

          Above the reels, the fascia is interrupted by the

20   rectangular screen 15 of a cathode ray tube.

          On the front console below the reel display, the machine has a start button 16 for initiating rolling of the reels, a respective operating button 17 for each of the reels which can be used either to move that reel

25   stepwise when a nudge feature has been made available, or to hold the position of that reel when a hold feature is available, a collect button 18 for collecting winnings,

and "cancel" button 19 for cancelling an instruction given to the machine.

A set of three further buttons 20 is provided on the fascia just below the display screen 15. The functions of these are explained below.

Artwork on the fascia includes a "trail" consisting of a series 21 of progressively illuminable numbers from 10 to 100. The trail series is positioned above the start button 16, leading upwardly in the general direction of the display screen 15. Other conventional artwork may be included. In particular, there will usually be a table indicating the various winning combinations of reel symbols and the amounts of the corresponding awards.

In operation, the player inserts sufficient coins into the slot to get one or more credits. Conversion of a credit by pressing the start button sets the fruit machine reels rolling in the conventional quasi-random manner. According to the resulting arrangement of symbols along the win line, an award may or may not be won. If no award is won and no features are offered, the player must convert another credit and set the reels rolling again.

A minority of the fruit symbols on the reels are accompanied by numbers. These are used to operate the trail feature. For each play of the fruits, the numbers appearing along the win line are totaled and the trail

12

series illuminates up to the total value. Normally the total is lost after each play, but in some cases a "hold" feature enables the total to be held and added to in the subsequent play.

5   For any winning combination of symbols, the player may simply collect the amount won using the collect button. If however the trail value reaches a predetermined minimum e.g. at least 70, or the symbols combination of the win line is one of a selected few high-value combinations, the machine determines this and 10 initiates a feature routine displayed on the display screen 15.

     In this embodiment, the screened feature enables the player to "gamble" the amount won. An increased award is 15 identified on the screen. The screen also shows the face of a playing card and the player is invited to guess whether a subsequent card of the same suit will be higher or lower in value. The player enters the guess using one of the extra buttons. The second card face is then 20 shown; if the player guessed correctly the gambled amount is achieved. It can be collected if wished. However at this stage the player may also gamble further by guessing for a further card. At the same time a "REVEAL" message is shown in a corner of the screen. If the player 25 prefers to play a feature rather than gamble further, he can press the right-hand extra button causing the machine to send to the screen a sel cted one of a number of

stored video games. One xample is a multiple-choice
quiz game, of the "trivia" type in which a question is
put on the screen together with three possible answers.
The player selects the answer using one of the three

5   extra buttons. For a correct guess, the player is
accredited with an award.

Another possible feature which can be exposed by the
"REVEAL" window is a shooting game. A series of moving
targets e.g. flying ducks, is depicted moving across the

10   top of the screen, as it were in the distance. A gun
barrel is depicted at the bottom of the screen and the
player uses the start button to time the launch of
projectiles from the gun barrel at the flying targets.
After all the targets have flown across, the number of

15   hits made is displayed and the award to the player
adjusted accordingly.

Another possible feature is a "scratch card". An
array of patches is shown on the screen, together with a
cursor which can be moved using two of the extra buttons.

20   The patches "conceal" fruit machine-style symbols. The
player chooses which of a specified small number of
patches he elects to uncover. If the symbols uncovered
are a winning combination, the winning amount is credited
to the player.

25   Because the game is shown on an electronic screen
and stored in video game format, the arrangement of
uncoverable symbols can be different for each of a number

14

of showings. Thi makes it impossible for even an experienced player to predict which patches should be uncovered in order to win.

A further feature obtainable by this route we call 5 "win series". When the "reveal" option is taken, the machine automatically actuates its own rotatable reels to reach a combination which is guaranteed to be a winning combination. The combination and the amount won are immediately shown on the display screen. The machine 10 then has a 50% probability of repeating the automatic win rolling of the reels as described, or of stopping the operation of that feature so that the player must play again. In this way a player may on this feature obtain several runs on the reels, each a winning run.

15 A number of other possible games may be used as the "reveal" feature. One possibility is a game using edited video material of actual events, discussed further below.

After features have been played on the screen, the screen displays the total amount which the player has in 20 credit.

When the feature has been played out, the player can collect his winnings, and go on to play another credit by rolling the fruit machine reels.

A novel characteristic of this embodiment is a self-25 regulating selection of the features. The different features available to the player by the "reveal" function are larger than the number of opportunities he has to

obtain such features. In the embodiment described, each successive gamble on the card game gives th player the option of a different "revealed" game. With experience, the player comes to know how many gambles he needs for his preferred revealed feature game. We construct the machine to monitor the number of times a given revealed feature is taken up. On the basis of the monitored distribution, the machine may withdraw the least popular options from availability and substitute different games. This ensures that a change of popularity of various games with time can be followed automatically by the machine, without any need for research and adjustment by service personnel.

Within the machine's cabinet are located a master control unit 25 and a slave control unit 26, a picture storage unit 27 and a video display. These are shown schematically.

The MCU displays pictures taken from the PSU onto the video display as well as controlling the reels via the SCU. It is possible to integrate the tasks performed by the SCU onto the MCU to achieve one control unit.

It should be understood that the hardware and software used for the master control, which effectively incorporates the reels game control, video display control, trail control, and video game initiating control, may in themselves be of conventional types which the skilled man can design on the basi of th proposals

herein. The actual divisions of the control functions within the master control is of course a matter of programming, and is not sensibly shown by illustration.

This machine also includes a "secret" feature. The machine is programmed to be put into "secret feature" mode whenever any one of a very few specific combination of symbols appears on the reel display. These combinations, and the existence of the "secret feature" mode, are however not indicated on the machine panel at all. When the mode is entered, however, some non-explanatory indicating sign, e.g. a light, appears on the display screen 15. An experienced player will notice this and realise that something special is happening. In this mode, the machine will respond to an ordered pressing of the hold/nudge buttons 17 by making a bonus award. The amount of the award depends on the order in which the buttons are pressed. Again, even an experienced player may take many games to understand the action required to gain a bonus payout following the indication on the display screen 15.

Such features are attractive to the experienced player.

The above description relates to the actual playing on the machine. When the machine is not being played, the control processor can revert to a more passive mode. This may nevertheless serve to attract players to the machine e.g. by displaying excerpts from the feature

games av ilable, or other messages, on the CRT display screen of the machine.

A feature offered on the display screen may involve the use of edited video material.

In a first stage, original film footage is taken of relevant events. For example, film can be taken of an actual roulette table on location, until all thirty-seven possible outcomes have occurred and been recorded. The film recorded on ordinary video tape is then edited and processed into separate clips, each showing a different number coming up. Once processed, the edited footage is converted from analogue tape format into digital picture format and stored e.g. on a laser disc using a laser video disc recording system.

The amusement machine is provided with a suitable player e.g. a laser disc player which is loaded with the digitised recorded information. When the machine is played, the main processor of the amusement machine will selectively identify and extract one of the outcomes. This might be according to a pre-determined sequence to give a particular payout percentage. The information for the desired outcome would be extracted from the player, using a graphics processor, and converted into the format which can be projected onto the conventional analogue monitor screen.

The above techniques are suitable for reproducing a simpl game requiring only short episod s of reproduced

action.   To obtain higher storage rates, the digitised
picture information can be down-loaded to a computer and
compressed using data compression software.   This is a
known technique, and can yield a compression rate of the
5   order of 40:1.   Means for de-compressing the information
are then fitted into the amusement machine's own on-board
processor.   After decompression, the data can then be
sent as before to the graphic processor and thence to the
screen.

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CLAIMS:

1.   A game machine comprising

      means for receiving credits;

5   a reels game system comprising a reels display
having plural reels showing reel symbols, and means for
converting a received credit to play a reels game by
initiating a change in the disposition of the reels
leading to a reels game result dependent on the changed
10   disposition of the reels;

      a video game system comprising a video display
screen, a video game store, and video display means for
displaying a video game from the video game store on the
video display screen;

15   a trail system, comprising a series of sequentially
activatable elements, which can be progressively
activated, cumulatively along the series, in dependence
on the reels game result, and

      video game initiating means to detect when the trail
20   is activated to a predetermined degree along the series,
and respond to that detection by initiating the display
of a said video game on the screen.

2.   A game machine according to claim 1, comprising a
25   video game control for use by a player to interact in the
video game.

3.   A gam machine according to claim 2 in which the
video game system comprises means for

displaying said video game as first and second game
elements which are different from one another, the first
5   game element comprising a display of a player choice, to
be input using the video game control, and

selecting the second game element in dependence on
the input choice.

10   4.   A game machine according to claim 3 in which the
player choice displayed by the first game element
comprises a choice between chance-determined adjustment
of an award value, and display of the second game
element.

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5.   A game machine according to claim 3 or claim 4 in
which the second game element is a player-interactive
skill game element.

20   6.   A game machine according to claim 3 or claim 4 in
which the second game element is a player-interactive
chance game element.

7.   A game machine according to any one of claims 3 to 6
25   in which the video game store stores a plurality of said
second game elements.

8. A game machine according to any one of the preceding claim in which the video displ y screen is positioned above the reels display.

5   9. A game machine according to any one of the preceding claims in which the elements of the trail system comprise respectively illuminable display segments.

10. A game machine according to any one of the preceding
10   claims in which the trail system comprises means for cancelling any activated element of the trail in at least 50% of conversions of received credits.

Patents Act 1977

Exa iner's report ɔ the C mptroller under Section 17 (Th S arch Report)

Relevant Technical fields

(i) UK Cl (Editi n   L)   G4V (VAA)

(ii) Int Cl (Edition   5)   G07F 17/34

Databases (see over)
(I) UK Patent Office

(II)

Search Examiner

G NICHOLLS

Date of Search

22 FEBRUARY 1993

Documents considered relevant following a search in respect of claims   1-10

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
Y	GB 2230373 A (BELL-FRUIT) See particularly page 5 line 26 – page 6 line 13	1, 9
Y	GB 2083936 A (COIN OPERATED PARTS) Whole document	1, 2
Y	GB 2072395 A (KENNEDY) Whole document	1, 2, 8

Categ ry	Iden../ f document and relevant passages	Relevant to claim(s)

Categories of documents

X: Document indicating lack of novelty or of inventive step.

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A: Document indicating technological background and/or state of the art.

P: Document published on or after the declared priority date but before the filing date of the present application.

E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.

&: Member of the same patent family, corresponding document.

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